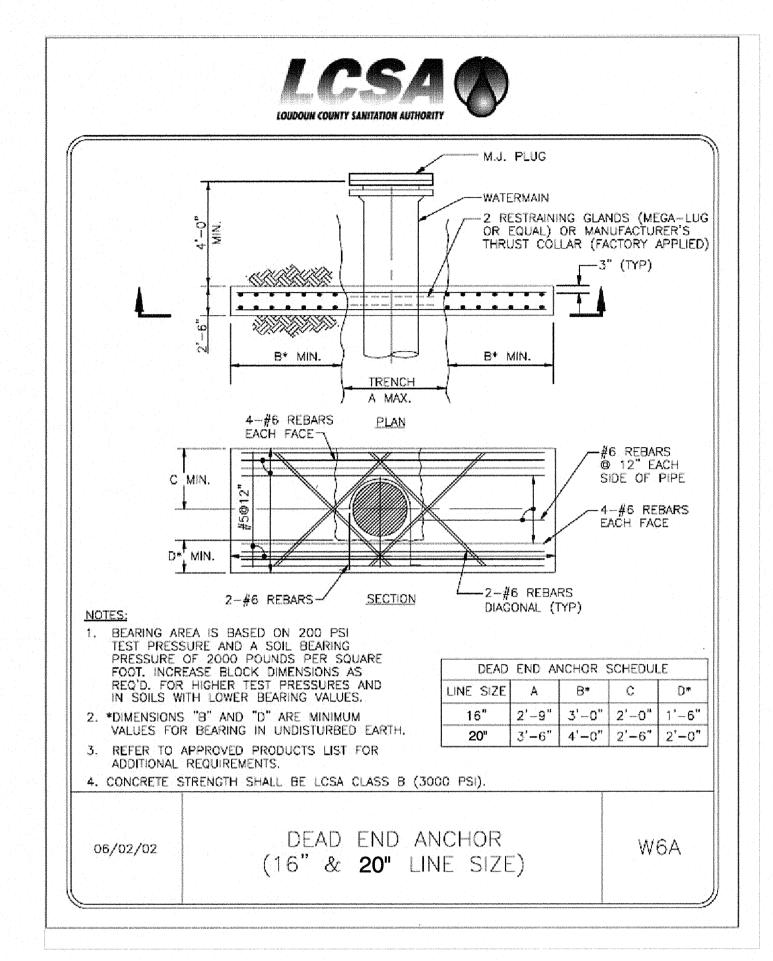
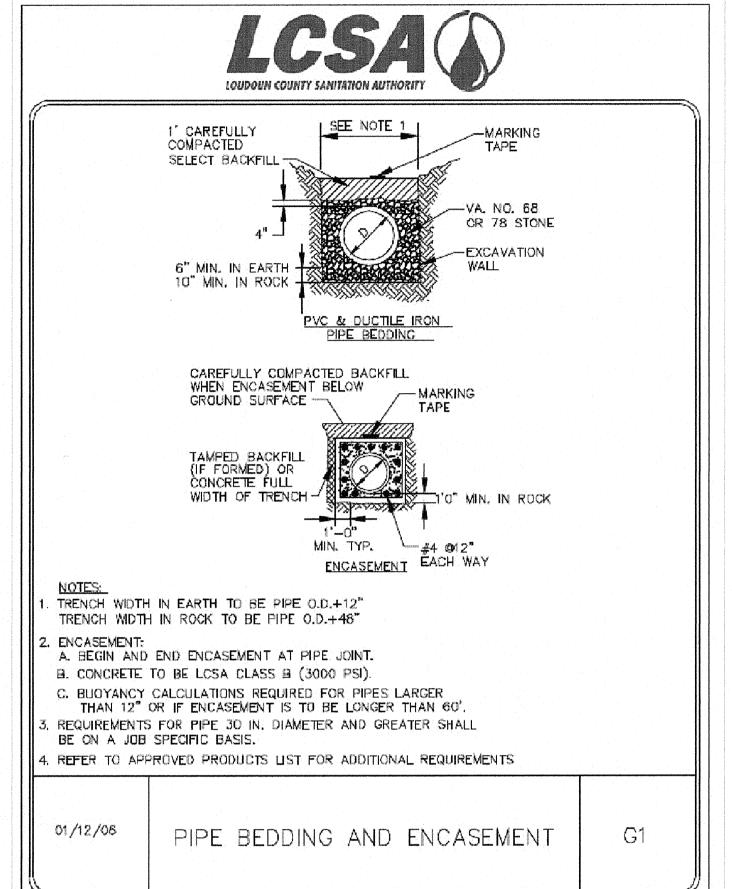
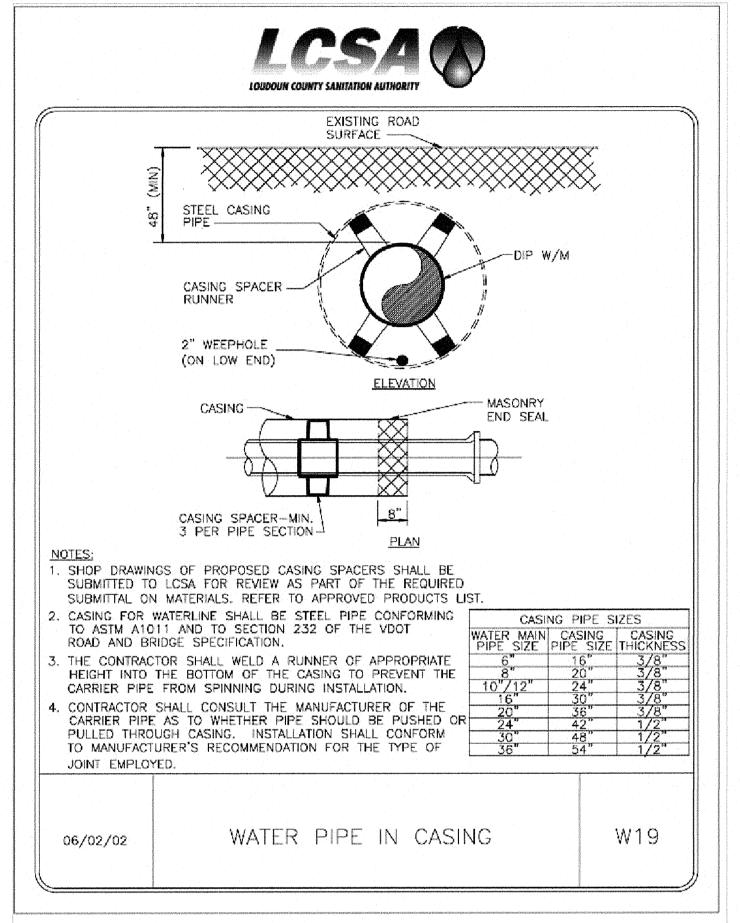
SUPERVISED BY DESIGNED BY Dewberry (703) 849-0607

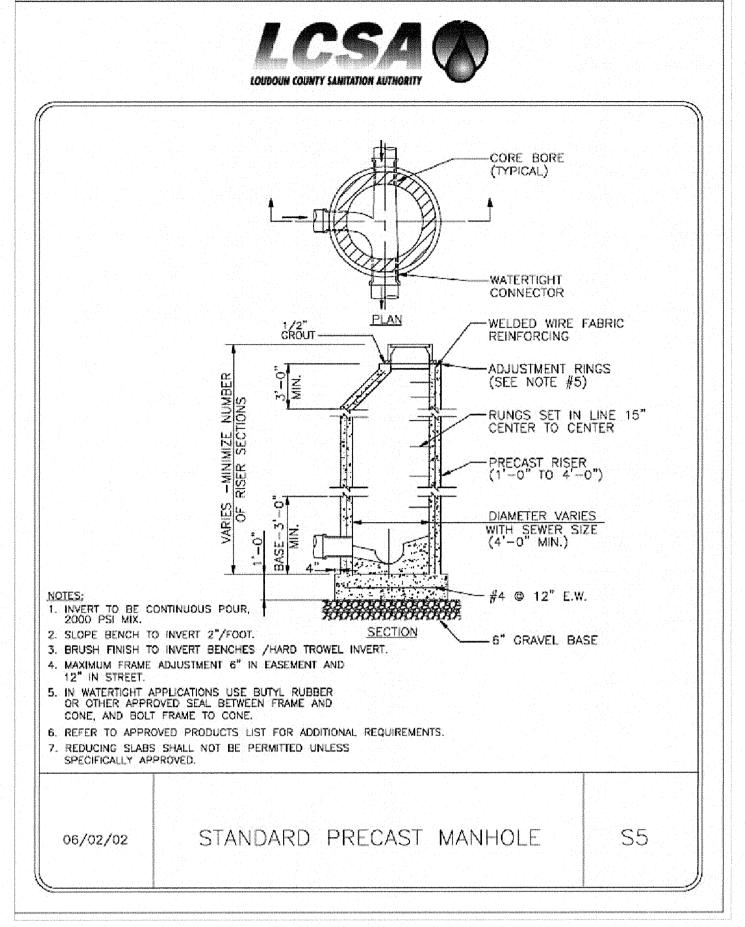
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	OTATE	FEDERAL AID	STATE					
	STATE	PROJECT	ROUTE PROJECT	SHEET NO.				
	VA.		7					



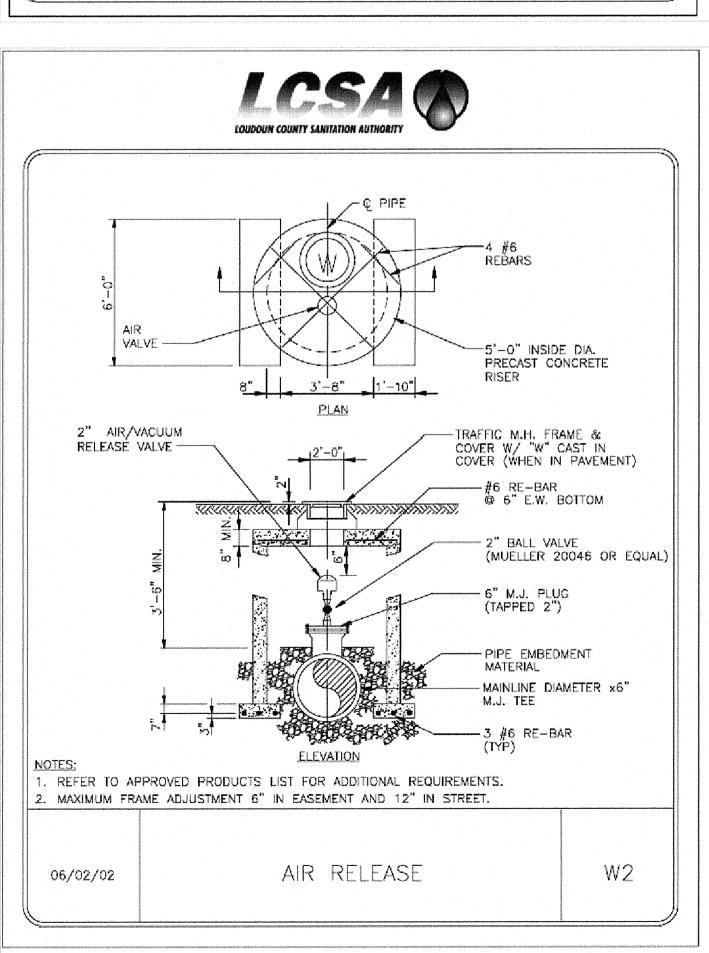


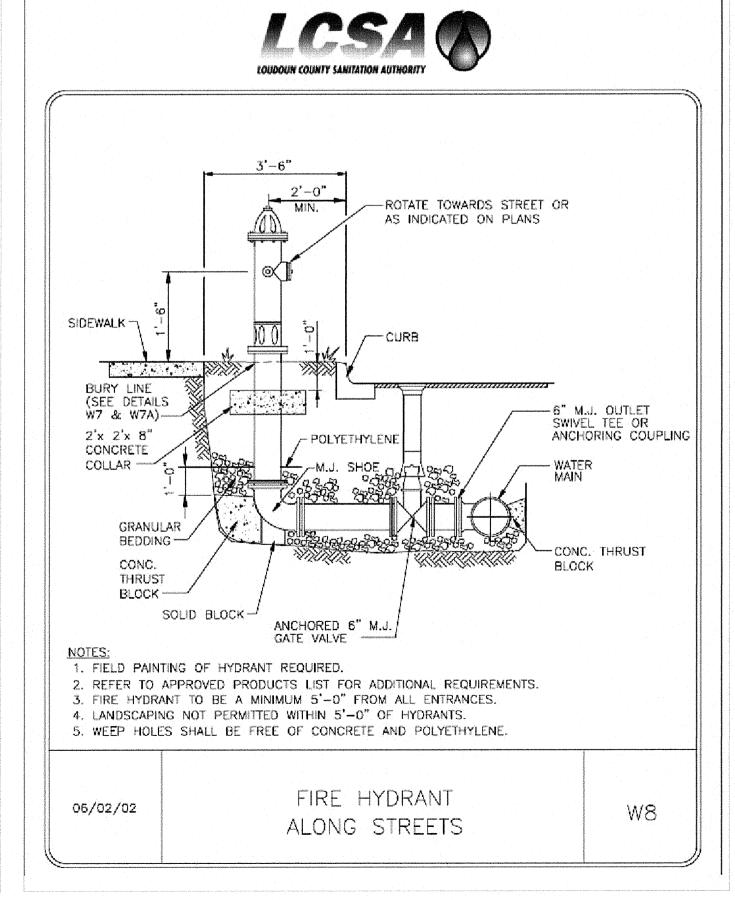




## STANDARD NOTES

- 1. All water mains and sanitary sewers must be constructed in accordance with the current LCSA Standards and Specifications.
- 2. No blasting is permitted within 25' of existing LCSA utilities.
- 3. Water services must maintain a minimum 6' horizontal separation from sanitary laterals.
- 4. All LCSA sanitary and water main easements must be 10', unless otherwise noted.
- 5. Sanitary sewers and water mains traversing lot lines must maintain a minimum 15' horizontal separation from proposed or existing buildings, unless prior permission is granted by LCSA.
- 6. All hydrants and meter crocks must maintain 5' horizontal separation from edge of driveway aprons.
- 7. Water mains must maintain a minimum 5' horizontal separation from edge of gutter pan, except at designated crossings.
- 8. Landscaping is not permitted within LCSA easements, or within 5' of fire hydrants and meter crock locations.
- 9. All water mains must be class 52 ductile iron pipe, unless otherwise noted.
- 10. A 2" detectable marking tape must be placed above all water mains outside of pavement.
- 11. Provide positive drainage for sanitary manholes located outside of pavement areas.
- 12. Top of manholes located outside of pavement areas must be 1' above finished grade. This requirement shall not apply in developed lawns.
- 13. Utilities outside the public right-of-way shall be provided with above ground marking stakes, spaced every 100 feet.

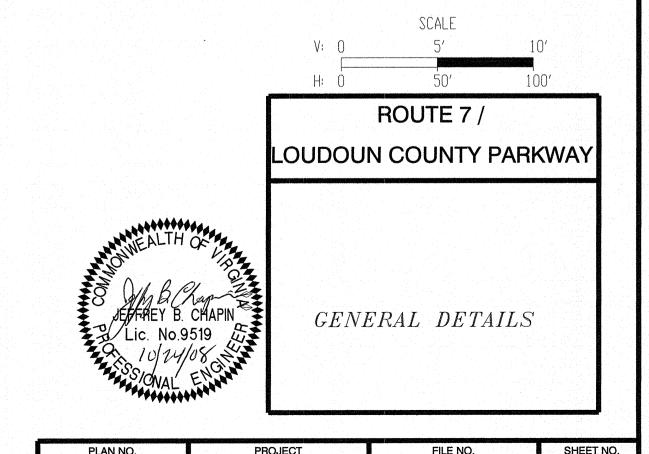




## THRUST RESTRAINT CALCULATIONS

RESTRAINT LENGTH(ft)	LOCATION	PIPE MATERIAL	SIZE	FITTING TYPE	BEND ANGLE	SOIL TYPE	TRENCH TYPE	TEST PRESSURE	SAFETY FACTOR	BURY DEPTH
40	1+00	DIP	30"X30"	TEE	N/A	CL	3	250 psi	1.5	4
75	10+00	DIP	30"		N/A	CL	3	250 psi	1.5	4
255	16+35.10	DIP	30"	BEND	22½°	CL	3	250 psi	1.5	4
180	18+78	DIP	30"X12"	TEE	N/A	CL	3	250 psi	1.5	4
70	26+39.56	DIP	8'	BEND	22½°	CL	3	250 psi	1.5	4
W/M "B"										
260	42+69.96	DIP	30"	BEND	90	CL	3	250 psi	1.5	4

PROJECT ID # 2007014



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